A NEW SPECIES OF CIRRHITUS FROM EASTER ISLAND [1]

(Pisces, Cirrhitidae)

By

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ABSTRACT

A new species of hawkfish *(Cirrhitus)* is recognized from Isla de Pascua (Easter Island), Chile. The description is based on the original specimen obtained at the island by Wilhelm in 1956. The new species, a male of 96 millimeters standard length, is distinguished from all other members of *Cirrhitus* by its small cheek scales, one - third smaller than thoracic scales, and by one less lower unbrached pectoral ray.

Comparison to the other six species of *Cirrhitus* indicates the new species is most closely related to *Cirrhitus splendens,* the other south Pacific Ocean member of the genus. Both share the characteristic of small thoracic scales, one-half the size of body scales, and the strongest development of serratelike spines on the preopercular margin.

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INTRODUCTION

In the fish collection of the Museo Zoológico, Universidad de Concepción, Chile, a small hawkfish, Family Cirrhitidae, was found among the fishes obtained at Isla de Pascua by Ottmar E. Wilhelm in January 1956. Wilhelm and Hulot (1957) included this specimen in a provisional list as cf. *Cirrhites*. De Buen (1963) in his contribution to the fishes of Easter Island merely listed the record, *Cirrhites* species. Randall (1963) in his revision of the family did not mention the record of Wilhelm and Hulot (1957), nor did he list any species of hawkfish from Easter Island.

This small hawkfish is an overall greenish color and still retains its original recorded total length, 120 mm. Although color photographs were taken by Wilhelm, no live color notes on this species are available.

Cirrhitids have been characterized by Randall (1963) on the basis of branched and unbranched pectoral fin rays; a continuous dorsal row of spines (X) and rays (11-17); anal fin spines (III) and rays (5-7); branchiostegal rays (6); pelvic fins (I 5); principal caudal rays (15); cirri on interspinous membranes and on anterior nostril; and free, broadly joined gill membranes at the isthmus. All of these features apply to the small fish from Easter Island.

A series of small cheek scales, overall presence of cycloid scales, a moderately elongate but normal snout, and rounded caudal fin indicate that this small fish is a member of the cirrhitid genus *Cirrhitus* Lacépede. In every characteristic listed by Randall (1963) for this genus of hawkfish all but three were in complete agreement. Those features that differ include unbranched pectoral fin rays (vi rather than vii lower unbranched rays), dorsal fin rays (13 rather than 11-12), and a more strongly serrate preopercular margin rather than finely serrate or smooth in *Cirrhitus*.

Among the species of *Cirrhitus*, the Easter Island individual is unique but, together with *C. splendens*, represents a group of hawkfish with small thoracic scales. The cheek scales of the Easter Island *Cirrhitus* are very small, one-third the size of the thoracic scales, distinguishing it from all other *Cirrhitus*.

Cirrhitus wilhelmi, new species

Figure 1

HOLOTYPE:

Universidad de Concepción, Concepción, Chile; Museo Zoológico, number H - 2877.

A male specimen, 96.0 mm in standard length (SL). Collected at Isla de Pascua (Easter Island), apparently in January 1956, by Ottmar E. Wilhelm.

DIAGNOSIS:

A *Cirrhitus* differing from all other members of the genus by having very small cheek scales, scales one - third smaller than thoracic scales rather than of equal size; and by having a pectoral fin formula of i7vi rather than i6ii.

Cirrhitus wilhelmi and *splendens* differ from *albopunctatus, atlanticus, pinnulatus, punctatus* and *rivulatus* in having thoracic scales smaller than the body scales rather than of equal size.

DESCRIPTION:

Body compressed, greatest depth at insertion of pelvic fins, tapering moderately to caudal peduncle; greatest width at gill openings, tapering very slightly to caudal peduncle. Head moderately pointed; profile, including orbit, with a marked indentation just behind orbit; anterior nostril with a cirrus having filamentous appendages; interorbital space markedly concave, scaled; supraoccipital crest prominent as a noticeable ridge; supraorbital ridge prominent, well developed, without hooklike posterior process. Mouth moderately large, slightly oblique; maxillary fails to reach a vertical at front margin of orbit; snout moderate, pointed, larger than orbit; preorbital completely scaled; its posterior margin not free; flattened opercular spines difficult to distinguish; margin of preoperculum free, smoothly curved with 10- 11 moderately strong coarselike serrations on dorsal portion, lower anterior part only slightly serrate.

Dentition as described by Randall (1963). Palatine teeth present; vomerine teeth absent.

Scales cycloid, thin and oblong-oval in shape; of three distinct sizes according to width; body scales 5 mm; thoracic scales 2 mm; cheek scales 0.7 mm on head, interorbital and snout; smallest scales on gill membrane flap between branchiostegal rays; scales extend partially on to all fins; three rows of large scales (5 mm) on operculum, surrounded by scales of smallest size; 6 or 7 predorsal scales; 43 pored scales in a longitudinal series along lateral line; 4 rows of scales above lateral line, 10 rows below.

Gill rakers rather short, stocky and coarsely textured; raker length constitutes one per cent of SL; gill filaments free; pseudobranchiae present.

Dorsal fin originates just in front of upper insertion of pectoral fin; dorsal spines moderately short, fourth spine longest, 2.6 in body depth; membrane between dorsal spines not deeply notched, slightly less than one - third notched; a tuft of cirri occurs on membrane just posterior to each dorsal spine; first dorsal ray not prolonged; anal fin originates under third dorsal ray; second anal spine longer and more robust than first or third; pectoral fin originates on lower third of body, unbranched rays extend to anus but not to anal fin; pelvic fins originate just behind fifth dorsal spine, longest pelvic rays reach to anal fin origin.

Peritoneum without pigment; ventral muscle mass thick; a male with no noticeable testicular development.

MEASUREMENTS:

Table I: Percentaje of standard length is given in parentheses after each measurement in millimeters.

Standard length	96.0	
Head length	35.0	(36.4)
Snout length	12.2	(12.7)
Orbit	8.0	(8.3)
Interorbital	5.1	(5.3)
Postorbital	15.8	(16.4)
Length of maxillary	12.0	(12.5)
Predorsal length	34.5	(35.9)
Dorsal fin base	55.5	(57.8)
Base of spinous portion	29.7	(30.9)
Preanal length	64.5	(67.2)
Anal fin base	14.2	(14.7)
Prepectoral length	35.0	(36.4)
Prepelvic length	47.5	(49.5)
Length of longest unbranched pectoral fin ray	27.8	(27.9)
Length of longest branched pectoral ray	21.0	(21.9)
Length of pelvic fin	21.0	(21.9)
Length of pelvic spine	12.5	(13.0)
Length of first dorsal spine	5.8	(6.0)

Length of longest dorsal spine, 4th	12.5	(13.0)
Length of last dorsal spine, 10th	9.5	(9.8)
Length of first dorsal ray	19.8	(20.6)
Length of second dorsal ray	19.0	(19.7)
Length of last dorsal ray	8.5	(8.8)
Length of first anal spine	10.0	(10.4)
Length of second anal spine	17.0	(17.7)
Length of third anal spine	13.1	(13.6)
Length of first anal ray	19.0	(19.7)
Length of last anal ray	13.7	(14.2)
Greatest body depth	32.5	(33.8)
Body width at gill opening	18.0	(18.7)
Least depth of caudal peduncle	11.0	(11.4)
Length of caudal peduncle	22.5	(23.4)
Length of caudal peduncle dorsal	12.8	(13.3)
Width of lateral body scales	5.0	(5.2)
Width of thoracic scales	2.1	(2.1)
Width of cheek scales	0.7	(0.7)

COUNTS:

Dorsal fin, X, 13; anal fin, III, 6; pectoral rays, i7vi; pelvic fins, I, 5; principal caudal rays, 15; Gill rakers, 4 + 1 + 10; branchiostegal rays, 6; lateral line scales, 43; 4 large scales above lateral line, with 2 rows of small scales between these 4 and dorsal fin; 10 large scales below lateral line; 27 rows of very small scales on cheek, from just behind upper postorbital region to a vertical from posterior edge of maxillary.

COLOR IN ALCOHOL:

General color bluish green with numerous brown-tan markings. Five moderately distinct broad brownish incomplete bands (bars) on the upper two - thirds of body; each band becomes indistinct below lateral line, dividing into 2 or 3 posteriorly trailing stripes (smaller bands); snout and interorbital regions dark brownish, without markings; a horizontally elongate brown spot posterior to eye, appears as spot just above preoperculum; all spines and rays an emerald green; all fin membranes a paletan, without any indication of markings.

DISTRIBUTION:

Known only from Isla de Pascua (27º 8' S - 109º 25' W), Chile, in the south eastern Pacific Ocean: the type locality.

DISCUSSION:

Cirrhitus wilhelmi is unique among members of the genus by having the highest number of dorsal rays, one fewer unbranched pectoral rays, and the smallest cheek scales. Although these three characteristics set it apart from all others, a numbers of features are shared with other species.

C. splendens and *wilhelmi* share the feature of small thoracic scales, fewest numbers of gill rakers, the strongest development of serrations on the preopercular margin and together with *C. punctatus* the strongest developed (height) supraorbital ridge among *Cirrhitus. C. splendens* is unique in having an elongate first dorsal ray and a hooklike supraorbital ridge. *C. wilhelmi, atlanticus* and *punctatus* have scales on the interorbital space. In all other species the interorbital space is naked.

C. atlanticus and *wilhelmi* share the same body scale formulae, four scale above the lateral line and ten below. *C. pinnulatus* and *albopunctatus* have three above and nine below; *C. splendens* and *punctatus* have four above and nine below; while *C. rivulatus* has five scale rows above the lateral line and nine below.

C. splendens and *punctatus* have pectoral fins that extend slightly beyond (posteriorly) the pelvic rays, but all the other species have slightly shorter pectoral fins. Probably pelvics insert just slightly posterior in those five species with slightly longer pelvic fins.

It is suggested that two subgeneric species groups exist within *Cirrhitus;* one of these the small scaled *splendens* group, ocurring in the South Pacific Ocean, and the other the *pinnulatus* species group, occurring more equatorial.

DERIVATION OF SPECIES NAME:

The species has been named *Cirrhitus wilhelmi* to honor Prof. Dr. Ottmar Wilhelm, former Director of the Institute of Biology of our University and outstanding promoter of the Marine Sciences in Chile.

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SUMMARY

A new species of Cirrhitidae, *Cirrhitus wilhelmi* n. sp., collected in the South Eastern Pacific, Isla de Pascua (27° 8' S - 109° 25' W), Chile, is described. The coloration, form and size; in addition to its affinities and differences with the other species of the genus *Cirrhitus,* are discussed.

This is the first species of hawkfish or *Cirrhitus* from Easter Island, Chile.

RESUMEN

Se describe una nueva especie de Cirrhitidae, *Cirrhitus wilhelmi* n. sp., colectado en el Pacífico sur oriental, Isla de Pascua (27° 8' S - 109° 25' W), Chile. Se discute su coloración, forma y tamaño; así como también las afinidades y diferencias con las otras especies del género *Cirrhitus.*

Es la primera especie de "pez halcón" o *Cirrhitus* descrita para Isla de Pascua, Chile.

ZUSAMMENFASSUNG

Es wird eine neue Art von Cirrhitidae beschrieben, *Cirrhitus wilhelmi* n. sp., Diese Art wurde an der Osterinsel gesammelt, im Südost des Stillen Ozeans, Isla de Pascua (27° 8' S - 109° 25' W), Chile. Es wird die Farbe.Form, und Grosse der Art analysiert, so wie ihre Ahnlichkeiten und Verschiedenheiten mit den anderen Arten Gattung *Cirrhitus.*

Es ist die erste Art dieser Gattung, die für Isla de Pascua, Chile beschrieben wird.

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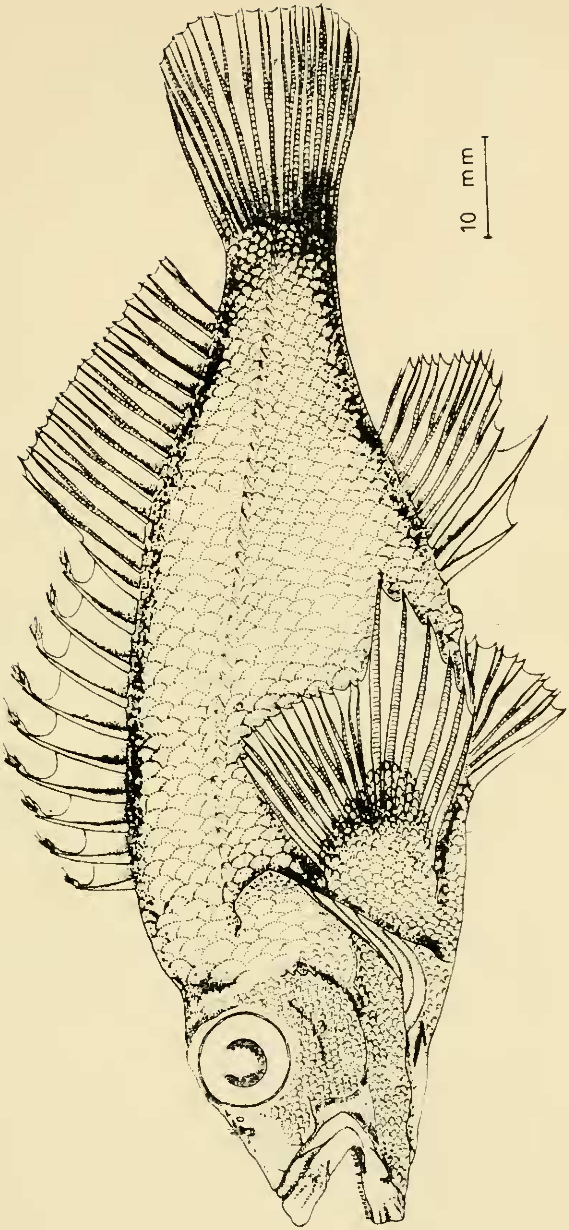

Figure 1.

Cirrhitus wilhelmi, new species, holotype, male, 96.0 mm standard length; Isla de Pascua; Museo Zoológico, Universidad de Concepción, Chile; Nº H-2877. (Drawing, A. Yáñez A.).